

DRILL HOLES

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BORDER REV. DATE: June 1, 2004

PROJECT DESCRIPTION

I. GENERAL

This project involves the installation of a new mast arm Traffic Control Signal with street lighting and interconnect at the intersection of MD 182 (Doctor Bird Rd) / MD 182 (Norwood Rd) and Norwood Road in Montgomery County. Video interface shall be installed for the MD 182 (Norwood Rd) and Norwood Road approaches. MD 182 (Doctor Bird Rd) / MD 182 (Norwood Rd) is assumed to run north-south direction.

II. INTERSECTION OPERATION

- The intersection is to operate in a NEMA four-phase, semi-actuated mode, with the MD 182 (Doctor Bird Rd) / MD 182 (Norwood Rd) approaches running concurrently. An Exclusive/Permissive left turn phase shall be provided for the southbound approach of MD 182 (Doctor Bird Rd). A Countdown pedestrian phase shall be provided across the east leg of Norwood Road. The Norwood Road approach shall run in its own phase.
- A full-traffic-actuated, eight-phase controller with video interface and all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.

III. SPECIAL NOTES

- The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.
- All controller cabinet wiring will be performed by Montgomery County Forces. Contact Kamal Hamud at (240) 777-8761 seventy-two hours in advance of intended work.
- All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility prior to construction so that all utilities may be located in the field. If the Contractor perceives that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.

The contact persons for District #3 (Montgomery County) are as follows:

Mr. Jeff Wentz
Assistant District Engineer - Traffic
Phone: (301) 513-7358

Mr. Kamal Hamud
Montgomery County TMC - Traffic Engineer
240-777-8761

Mr. Wayne Mowdy
Assistant District Engineer - Maintenance
Phone: (301) 513-7304

Mr. Sonny Bailey
Chief, Sign Shop
410-787-7676

Mr. Augie Rebish
District Engineer - Utility
Phone: (301) 513-7350

The power company representative is:

Mr. Richard L. Daff, Sr.
Chief, Traffic Operations Division
Phone: (410) 787-7630

Mr. Steve Custer
PEPCO Customer Design
201 W Gude Dr.
Rockville, MD 20850
Phone: 301 548-4333

EQUIPMENT LIST

| A. | EQUIPMENT TO BE FURNISHED BY S.H.A. | |
|---------|---|----------|
| CAT NO. | DESCRIPTION | QUANTITY |
| 900000 | VIDEO INTERFACE EQUIPMENT | 1 EA |
| 971017 | EIGHT PHASE (FULLY ACTUATED) CONTROLLER AND CABINET - BASE MOUNT | 1 EA |
| 973023 | SHEET ALUMINIUM SIGNS | 77 SF |
| | D-3(1) "Norwood Rd <17400 / Doctor Bird Rd 17400>" sign, (dual faced) (variable x 32"). | 1 EA |
| | D-3(1) "Norwood Rd <17400/ Norwood Rd 17400>" sign, (Dual Face) (variable x 16"). | 2 EA |
| | M95-1 - NORTH (arrow) MD 182 SOUTH (arrow)" sign (78"x24") | 1 EA |
| | "TEMPORARY SIGN "W3-3 NEW 36"x36" | 2 EA |
| | "TEMPORARY SIGN "W3-3 NEW 30"x30" | 1 EA |

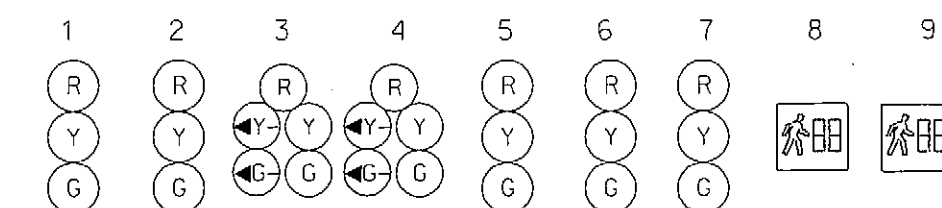
B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

| CAT NO. | DESCRIPTION | QUANTITY |
|---------|---|----------|
| 203030 | TEST PIT EXCAVATION | 6 CY |
| 585600 | 5 INCH WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS | 6200 LF |
| 585604 | 5 INCH YELLOW PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS | 3000 LF |
| 585606 | 10 INCH YELLOW PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS | 150 LF |
| 585621 | 12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES | 170 LF |
| 585625 | 24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES | 150 LF |
| 800000A | 16" COUNTDOWN PEDESTRIAN SIGNAL HEAD | 2 EA |
| 800000A | 1 CONDUCTOR (NO. 250 KCMIL) ELECTRICAL CABLE | 300 LF |
| 801004 | CONCRETE FOR SIGNAL FOUNDATION | 10 CY |
| 801130 | SQUARE PERFORATED TUBULAR STEEL SIGN POSTS | 8 EA |
| 802501 | NO. 6 AWG STRANDED BARE COPPER GROUND WIRE | 630 LF |
| 805118 | 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-BORED | 450 LF |
| 805125 | 2 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED | 150 LF |
| 805135 | 3 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED | 1900 LF |
| 805140 | 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED | 200 LF |
| 807202 | METERED SERVICE PEDESTAL | 1 EA |
| 810010 | ELECTRICAL CABLE - 1 CONDUCTOR (NO. 4 AWG-THHN/THWN) | 70 LF |
| 811001 | FURNISH AND INSTALL ELECTRICAL HANDHOLE | 10 EA |
| 813014 | INSTALL GROUND MOUNTED SIGN | 63 SF |
| 813015 | INSTALL OVERHEAD SIGN | 53 SF |
| 816001 | VIDEO DETECTION CAMERA | 2 EA |
| 816010 | CONTROL CABLE, 500 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER | 2 EA |
| 800000 | 10 FOOT BREAKAWAY PEDESTAL POLE WITH MODIFIED BASE | 2 EA |
| 818021 | STEEL POLE WITH A TWIN 50 FOOT MAST ARMS | 1 EA |
| 818036 | STEEL POLE WITH A SINGLE 50 FT MAST ARM | 1 EA |
| 822002 | 12-PAIR COMMUNICATION CABLE, JELLYFILLED (UNDERGROUND) | 1200 LF |
| 837001 | GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH | 6 EA |
| 860284 | 12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION | 25 EA |
| 860292 | CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE | 1 EA |
| 861105 | ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG) | 575 LF |
| 861107 | ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG) | 575 LF |
| 861108 | ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG) | 375 LF |
| 861116 | ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG TC) | 375 LF |
| 871202 | INSTALL CONTROLLER CABINET - BASE MOUNT | 1 EA |
| 800000A | INSTALL SPICE CABINET | 1 EA |

C. EQUIPMENT TO SUPPLIED BY MONTGOMERY COUNTY

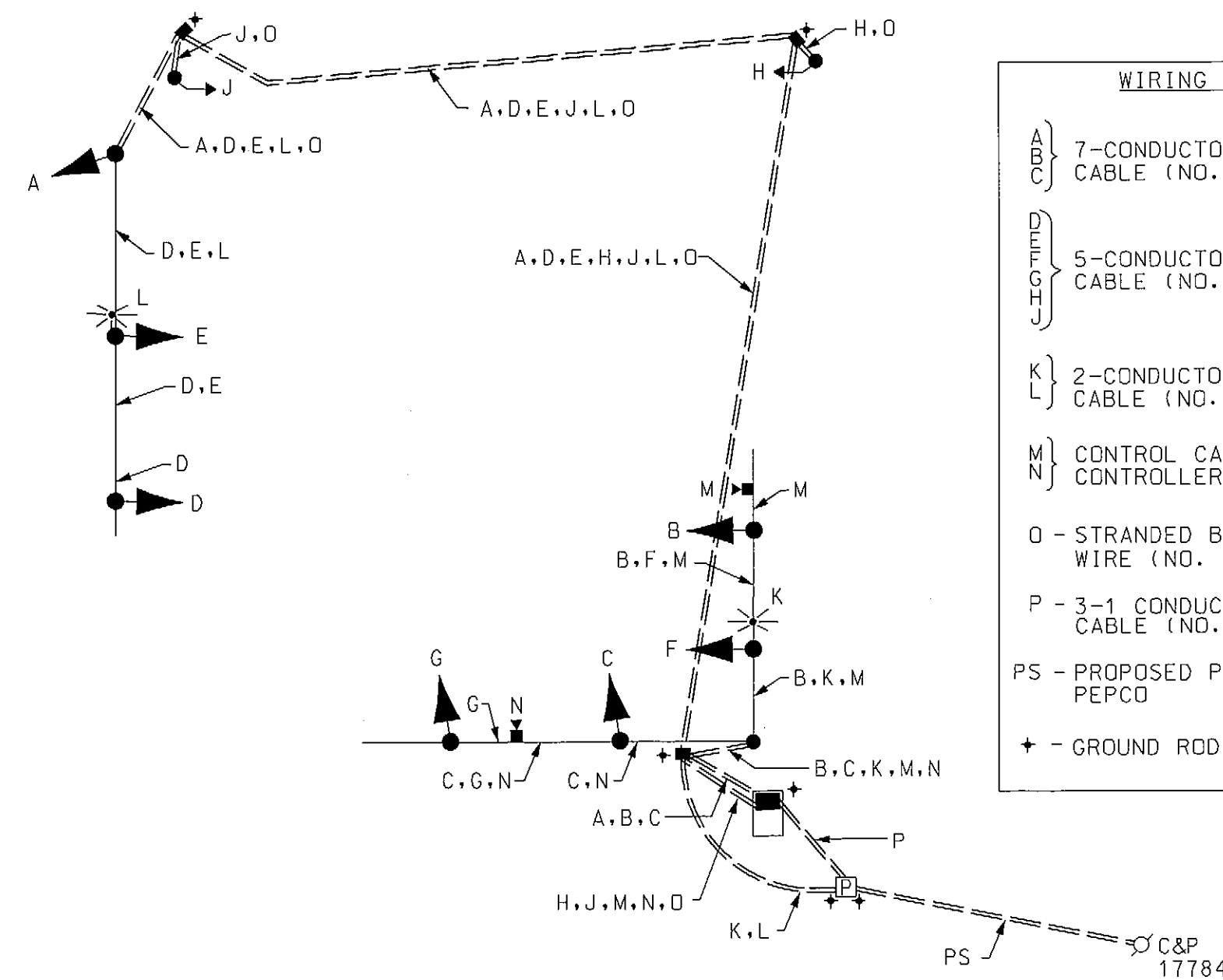
Montgomery County splice cabinet 1 EA

PHASE CHART



| | | | | | | | | | | |
|-----------------------|------|------|------|------|------|------|------|-------|-------|---|
| PHASE 2 & 5 | R | R | ←G→G | ←G→G | G | R | R | DW | DW | ↑ |
| 2 & 5 CHANGE | R | R | ←Y→G | ←Y→G | G | R | R | DW | DW | ↑ |
| PHASE 2 & 6 | G | G | G | G | G | R | R | WK | WK | ↑ |
| PED CLEAR / COUNTDOWN | G | G | G | G | G | R | R | FL/DW | FL/DW | ↑ |
| 2 & 6 CHANGE | Y | Y | Y | Y | Y | R | R | DW | DW | ↑ |
| PHASE 4 | R | R | R | R | R | G | G | DW | DW | ↑ |
| 4 CHANGE | R | R | R | R | R | Y | Y | DW | DW | ↑ |
| FLASHING OPERATION | FL/Y | FL/Y | FL/Y | FL/Y | FL/Y | FL/R | FL/R | DARK | DARK | ↑ |

WIRING DIAGRAM



| WIRING KEY | |
|------------|---|
| (C) | 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.) |
| (D) | 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.) |
| (K) | 2-CONDUCTOR ELECTRICAL TRAY CABLE (NO. 12 A.W.G.) |
| (M) | CONTROL CABLE (CAMERA TO CONTROLLER) 500' |
| (O) | STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.) |
| (P) | 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.) |
| (PS) | PROPOSED POWER SERVICE PEPCO |
| (+) | GROUND ROD |

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 182 (NORWOOD RD) / MD 182
(DOCTOR BIRD RD) AND NORWOOD RD

OLNEY, MARYLAND

GENERAL INFORMATION SHEET

SCALE NONE DATE 5/19/09 CONTRACT NO. MD5625176

DESIGNED BY James Allen Jr. COUNTY MONTGOMERY
DRAWN BY James Allen Jr. LOGMILE 15018205.90
CHECKED BY TIMS NO. 1567
F.A.P. NO. TOO NO.

TS NO. 4706 DRAWING NO. 2 OF 5 SHEET NO. OF



561161.DGN T-195

PLOTTED: WEDNESDAY, MAY 20, 2009 AT 10:56 AM
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